

**REMARKS**

Claims 34-53 are pending in the present application and at issue. Claim 34 has been amended to address the indefiniteness rejection.

It is respectfully submitted that the present amendment presents no new issues or new matter and places this case in condition for allowance. Reconsideration of the application in view of the above amendments and the following remarks is requested.

**I. The Rejection of Claims 34-53 under 35 U.S.C. 112**

Claims 34-53 are rejected under 35 U.S.C. 112 as failing to comply with the written description requirement. The Office provided two grounds for this rejection. Both grounds are respectfully traversed.

First, the Office stated that "Support is not found in the specification for using corn steep liquor without the liquor providing a sufficient amount of lactic acid to stabilize the phytase as now claimed."

Support for using corn steep liquor can be found throughout the specification, including the originally-filed claims. For example, original claims 1 and 4 read:

1. A solid phytase composition comprising
  - a. an enzyme having phytase activity, and
  - b. a lactic acid source,wherein the phytase activity of the composition is above 20 units/g.
  
4. The composition of claim 1, wherein the lactic acid source is Corn Steep Liquor (CSL).

Neither claim recites that the corn steep liquor produces a sufficient amount of lactic acid to stabilize the phytase. Moreover, the specification contains several examples which demonstrate that the addition of corn steep liquor stabilizes a phytase. The reason corn steep liquor stabilizes a phytase is not material to Applicants' invention.

Second, the Office stated that "support is not found for the ranges of claims 50-53."

Support for the ranges recited in claims 50-53 is found in the specification as follows:

Claim 50 - "phytase activity is in the range of 20-50,000 FYT/g" – page 9, line 6

Claim 51 - "phytase activity is in the range of 100-25,000 FYT/g" – page 3, line 14

Claim 52 - "phytase activity is in the range of 500-10,000 FYT/g" – page 3, line 15

Claim 53 - "phytase activity is in the range of 1,000-5,000 FYT/g" – page 3, lines 15-16

For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 112. Applicants respectfully request reconsideration and withdrawal of the rejection.

## **II. The Rejection of Claims 34-53 under 35 U.S.C. 112**

Claims 34-53 are rejected under 35 U.S.C. 112 as being indefinite. Specifically, the Office stated that "The claims are confusing and unclear by claim 34 in the last line not having clear antecedent basis for 'the enzyme'. This rejection is respectfully traversed.

The enzyme referenced in the last line of claim 34 clearly refers to the enzyme having phytase activity recited in line 2. Applicants therefore submit that there is antecedent basis for "the enzyme."

In order to advance prosecution, claim 34 has been amended to recite "the enzyme having phytase activity."

For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 112. Applicants respectfully request reconsideration and withdrawal of the rejection.

## **III. The Rejection of Claims 34-53 under 35 U.S.C. 103**

Claims 34-53 are rejected under 35 U.S.C. 103 as being unpatentable over De Lima et al. (U.S. Patent No. 6,136,772) or Harz et al. (U.S. Patent No. 5,972,669) or Lassen et al. (U.S. Patent No. 6,060,298) in view of Linton et al. (U.S. Patent No. 4,859,485) and Akhtar (U.S. Patent No. 5,750,005). Claims 34-53 also are rejected under 35 U.S.C. 103 as being unpatentable over Linton et al. in view of De Lima et al. or Harz et al. or Lassen et al. and Akhtar. These rejections are respectfully traversed.

De Lima et al., Harz et al. and Lassen et al. disclose enzymatic animal feed compositions comprising a phytase.

Linton et al. and Akhtar disclose non-enzymatic compositions comprising corn steep liquor.

As the Office concedes, none of the cited references disclose a feed composition comprising both a phytase and a lactic acid source.

Moreover, none of the cited references suggests that corn steep liquor would stabilize a phytase contained in an animal feed composition, as demonstrated in the present application. For example, in Example 4, Applicants show that for a control premix (i.e., an animal feed premix comprising a phytase but not corn steep liquor), the residual phytase activity after 13 weeks storage at 30°C was 61% and 64%. However, after adding corn steep liquor with and without

wheat starch, the residual phytase activity increased to 81-90%, i.e., about 17-29% greater than the control. Similar results are shown in Examples 5-7.

Prior to Applicant's invention, the skilled artisan did not know what effect, if any, corn steep liquor would have on a phytase. As discussed above, Applicants have demonstrated that the addition of corn steep liquor to a phytase-containing animal feed improves the stability of the phytase. Since the demonstrated superior property is not predicted by the prior art, the showing overcomes any assertion of obviousness based on the cited art.

For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 103. Applicants respectfully request reconsideration and withdrawal of the rejection.

#### **IV. The Rejection of Claims 34-53 under the Doctrine of Obviousness-Type Double Patenting**

Claims 34-53 are rejected under the doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of U.S. Patent No. 6,610,519.

Applicants enclose a Terminal Disclaimer Under 37 C.F.R. 1.321 disclaiming the terminal portion of any patent granted on the above-identified application which would extend beyond the expiration date of the above noted US patent. Applicants, therefore, submit that this rejection has been overcome.

#### **V. Conclusion**

In view of the above, it is respectfully submitted that all claims are in condition for allowance. Early action to that end is respectfully requested. The Examiner is hereby invited to contact the undersigned by telephone if there are any questions concerning this amendment or application.

Respectfully submitted,

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